**CLAIMS** A method comprising: 1. forming a trench in a substrate; providing at least one metalized surface along said trench; and 3 applying a bonding surface having a metalized capping surface to said substrate such that said 4 metalized capping surface is located over said trench having said at least one metalized surface so as 5 to form a waveguide structure. The method of claim 1, wherein said substrate comprises a printed circuit board. 2. The method of claim 1, wherein said substrate comprises a dielectric material. 3. The method of claim 3, wherein said trench is formed by selectively removing portions 4. of said dielectric material. 2 The method of claim 1, wherein said at least one metalized surface comprises sidewall 5. surfaces and a bottom surface of said waveguide structure. 2 The method of claim 1, wherein said metalized capping surface on said bonding 6.

surface is formed by applying a metal coating on said bonding surface and selectively removing

portions of said metal coating such that said metalized capping surface remains on said bonding

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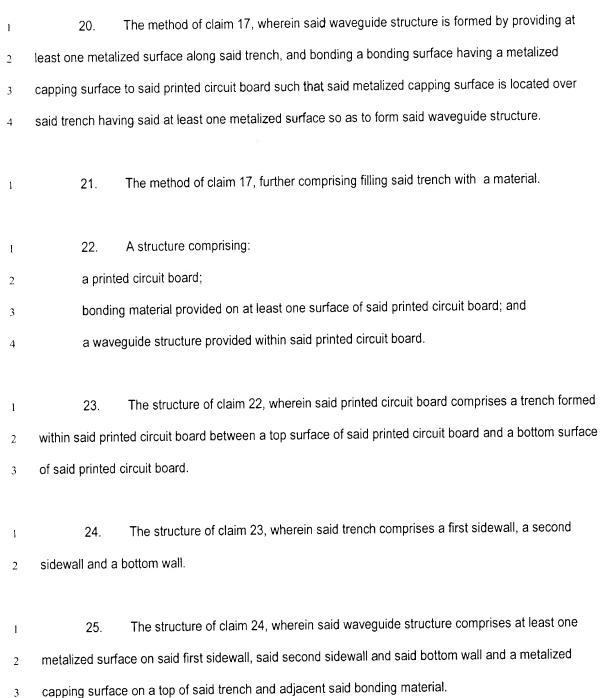
surface.

The method of claim 1, wherein said metalized capping surface on said bonding 7. 1 surface is formed by providing said bonding surface and selectively placing said metalized capping 2 surface on said bonding surface. 3 The method of claim 1, further comprising filling said trench with a material. 8. 1 A method comprising: 9. forming a trench in a printed circuit board substrate, said trench having a first side surface, a 2 second side surface and a bottom surface; 3 forming at least one surface on said first side surface, said second side surface and said 4 bottom surface of said trench; and 5 forming a top surface over said trench having said at least one surface. 6 The method of claim 9, wherein said at least one surface comprises at least one 10. 1 metalized surface and said top surface comprises a top metalized surface. The method of claim 10, wherein said substrate comprises a dielectric material. 11. 1 The method of claim 11, wherein said trench is formed by selectively removing portions 12. of said printed circuit board substrate. 2 The method of claim 11, wherein forming said top metalized surface over said trench 13. 1 comprises affixing a bonding surface having a metalized capping surface to said printed circuit board 2

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3	substrate.	•
1	14.	The method of claim 13, wherein said top metalized surface on said bonding surface
2	is formed by applying a metal coating on said bonding surface and selectively removing portions of said	
3	metal coating such that said top metalized surface remains on said bonding surface.	
1	15.	The method of claim 13, wherein said top metalized surface on said bonding surface is
2	formed by providing said bonding surface and selectively aligning said top metalized surface on said	
3	bonding surface.	
1	16.	The method of claim 9, further comprising filling said trench with a material.
1	17.	A method comprising:
2	forming a trench in a printed circuit board; and	
3	forming a waveguide structure in said trench of said printed circuit board, said waveguide	
4	structure having at least one metalized surface.	
ì	18.	The method of claim 17, wherein said trench comprises a first sidewall, a second
2	sidewall and a bottom wall.	
1	19	The method of claim 18, wherein said waveguide structure comprises said at least one

metalized surface on said first sidewall, said second sidewall and said bottom wall and a metalized

surface on a top of said trench.



26. The structure of claim 23, wherein said trench is filled with a material.